Electronic Version
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Description

Collapsible Spiral Stair

Brief Description of Drawings

[0001] The advantages of the immediate invention are attained by the devices shown by way of illustration in the drawings in which FIG.1 is a perspective view of the spiral stair as described in claim 2 comprising a center pole 1, a plurality of steps 2, a helical track 3 that allows sliding attachment of the steps, and a cable 4 in FIG.4A that serves to attach the steps one to another. FIG.2 shows a device as described in claim 3 comprising a center pole 5, a plurality of steps 6 and a plurality of channels 7 along the length of the center pole 5 within which the individual steps are able to translate. In both configurations, it is preferred that an automatic electronic mechanism be adapted to raise and lower the steps. FIG.3 is a top view of the stair in FIG.2. FIG.3A is a detail view of the channels 7 along the center pole 5. These are only two preferred configurations for the immediate invention.

Detailed Description

[0002] Spiral stairs have the advantage of a smaller footprint than conventional stairs but this invention improves that advantage. Spiral staircases can be made to collapse or retract in a way that further decreases or eliminates the permanent footprint of the stair.

[0003] This invention can have various configurations including designs comprising a stationary center pole along which individual steps slide or swing or a telescoping center pole that is collapsed in the vertical dimension when not in use. Other configurations could exist as well such as a design with no center pole where each step is attached to those directly above and below using mechanical linkages. This later design would conceivably be much more complex and likely less stable.

[0004] A preferred configuration of the invention is a stationary and fixed center pole having a single track located along the outside of the pole that rotates around the pole as it extends along the length of the pole. This track serves as the attachment point between the pole and steps; the steps being movable along the track and each step being attached to the step immediately above and below by mechanical means, preferably a metal cable that limits the spacing between steps to a predetermined amount. The

uppermost step being fixed permanently or temporarily into position so that each subsequent step would "hang" from the step above.

[0005] The preferred material for the invention is metal although other materials such as wood and composites could be used as well.